



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,824	09/20/2005	Ying Wu	65959/53	3692

7590 01/31/2007
Craig J Arnold
Amster Rothstein & Ebenstein
90 Park Avenue
New York, NY 10016

EXAMINER

JUNG, UNSU

ART UNIT	PAPER NUMBER
----------	--------------

1641

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
31 DAYS	01/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/549,824

Applicant(s)

WU ET AL.

Examiner

Unsu Jung

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-24 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' amendments to claims 3, 4, 6-12, 14, 16, 17, 19, 20, and 22-24 in the reply filed on September 20, 2005 have been acknowledged and entered.
2. Claims 1-24 are pending.

Election/Restrictions

3. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-22 and 24, drawn to a method of providing biomolecules on a metal oxide substrate, a metal oxide substrate, and a kit comprising a metal oxide substrate.

Group II, claim(s) 12-24, drawn to a method for performing probe-based assays using a metal oxide substrate, a metal oxide substrate, and a kit comprising a metal oxide substrate.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of Groups I and II is the metal oxide substrate. The metal oxide substrate cannot be a special technical feature under PTC Rule 13.2 because the metal oxide substrate has been shown in the prior art. Rupp et al. (U.S. PG Pub. No. US 2004/0014061 A2, Published as a WO 01/85989 on Nov. 15, 2001) teaches the metal oxide substrate having a surface that is coated with a polymer and having biomolecules immobilized on the substrate (pp3-4, paragraph [0028]).

Election of Species within Group I

4. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

List I: Polymer

- A. Poly-aspartate
- B. Poly-glutamate
- C. Poly-cystein
- D. Poly-serine
- E. Poly-methionine
- F. Poly-arginine
- G. Poly-histidine
- H. Poly-tryptophane
- I. Poly-alanine
- J. Poly-lysine
- K. Poly-leucine
- L. Poly-isoleucine
- M. Poly-tyrosine
- N. Poly-valine
- O. Poly-glycine
- P. Poly-proline
- Q. Poly-phenylalanine
- R. Poly-threonine
- S. Polymers of natural amino acids
- T. Polymers of non-natural amino acids
- U. Derivatives thereof
- V. Mixtures thereof

List II: Biomolecules

- A. Oligonucleotides
- B. Polynucleotides
- C. Ribonucleotides
- D. Proteins
- E. Antibodies
- F. Antigens
- G. Peptides
- H. Oligo or poly-saccharides

Art Unit: 1641

- I. Receptors
- J. Haptens
- K. Ligands
- L. Drugs
- M. Toxins
- N. Liposomes

List III: Labels

- A. Bioluminescence
- B. Chemiluminescence
- C. Photoluminescence

Applicant is required, in reply to this action, to elect a single species from three lists of species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The claims are deemed to correspond to the species listed above in the following manner:

List I: Polymer

- A. Poly-aspartate (claim 4)
- B. Poly-glutamate (claim 4)
- C. Poly-cystein (claim 4)
- D. Poly-serine (claim 4)
- E. Poly-methionine (claim 4)
- F. Poly-arginine (claim 4)
- G. Poly-histidine (claim 4)
- H. Poly-tryptophane (claim 4)

Art Unit: 1641

- I. Poly-alanine (claim 4)
- J. Poly-lysine (claims 4, 5, 15, and 18)
- K. Poly-leucine (claim 4)
- L. Poly-isoleucine (claim 4)
- M. Poly-tyrosine (claim 4)
- N. Poly-valine (claim 4)
- O. Poly-glycine (claim 4)
- P. Poly-proline (claim 4)
- Q. Poly-phenylalanine (claim 4)
- R. Poly-threonine (claim 4)
- S. Polymers of natural amino acids (claim 4)
- T. Polymers of non-natural amino acids (claim 4)
- U. Derivatives thereof (claim 4)
- V. Mixtures thereof (claim 4)

List II: Biomolecules

- A. Oligonucleotides (claim 11)
- B. Polynucleotides (claim 11)
- C. Ribonucleotides (claim 11)
- D. Proteins (claim 11)
- E. Antibodies (claim 11)
- F. Antigens (claim 11)
- G. Peptides (claim 11)
- H. Oligo or poly-saccharides (claim 11)
- I. Receptors (claim 11)
- J. Haptens (claim 11)
- K. Ligands (claim 11)
- L. Drugs (claim 11)
- M. Toxins (claim 11)
- N. Liposomes (claim 11)

List III: Labels

- A. Bioluminescence (claim 22)
- B. Chemiluminescence (claim 22)
- C. Photoluminescence (claim 22)

The following claim(s) are generic: claims 1-3, 6-10, 12-14, 16, 17, 19-21, and 24.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: each species of polymer, biomolecules, and labels have different special technical features as each species of polymer, biomolecules, and labels include structurally and molecularly distinct species

Art Unit: 1641

of compounds. Therefore, each species of polymer, biomolecules, and labels lack unity of invention.

Election of Species within Group II

5. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

List: Labels

- A. Bioluminescence
- B. Chemiluminescence
- C. Photoluminescence

Applicant is required, in reply to this action, to elect a single species from three lists of species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The claims are deemed to correspond to the species listed above in the following manner:

List: Labels

- A. Bioluminescence (claim 22)
- B. Chemiluminescence (claim 22)
- C. Photoluminescence (claim 22)

The following claim(s) are generic: claims 1-3, 6-10, 12-14, 16, 17, 19-21, and 24.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: each species of labels have different special technical features as each species of labels include structurally and molecularly distinct species of compounds capable of producing different types of luminescence (bio, chemi, and photoluminescence). Therefore, each species of labels lack unity of invention.

6. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Unsu Jung whose telephone number is 571-272-8506. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

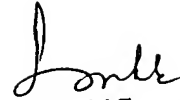
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/549,824
Art Unit: 1641

Page 9



Unsu Jung, Ph.D.
Patent Examiner
Art Unit 1641



LONG V. LE 01/22/07
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600